

### **REMARKS**

Applicants appreciate Examiner Ramana's effort and consideration in regard to prosecution of this application. Reconsideration of this application, as amended, is respectfully requested.

#### **INTERVIEW SUMMARY**

Consistent with Applicants' discussion with the Examiner, the claims have been amended herein to refer simply to "quenched" polyethylene in lieu of "free-radical quenched". This set of claims included herein is marked up as if it had first appeared in the response dated September 3, 2009.

Applicants also discussed further why one skilled in the art would not surface gradient crosslink the bearing of Devanathan as proposed in the Section 103 rejections. Specifically, Devanathan's molded, finished acetabular cup consists of UHMWPE and PMMA. PMMA is an acrylic with a glass transition temperature that ranges from 85°C – 165°C, depending on the commercial composition (as an amorphous polymer, it does not melt at a specific temperature, instead softens gradually as a function of temperature). Orthopaedic PMMA compositions tend to be on the low end of this range. UHMWPE is post-irradiation annealed at a temperature of around 140°C – 150°C. With this in mind, one skilled in the art would not be motivated to radiation crosslink the finished acetabular cup of Devanathan, since to do so would require post-irradiation annealing at a temperature which closely coincides with the glass transition temperature of PMMA. Unlike UHMWPE which remains workable (or solid-like) above its melting temperature, PMMA turns to a liquid (with the approximate viscosity of honey) above its glass transition temperature. As such, post-irradiation quenching would cause deformation of the PMMA thereby causing Devanathan's acetabular cup to lose its shape. Moreover, PMMA undergoes chain scissions when subjected to radiation thereby making it more

brittle. For these reasons, one skilled in the art would not be motivated to subject Devanathan's acetabular cup to the radiation crosslinking process of Krebs.

#### REQUEST OF THE EXAMINER

Applicants' undersigned counsel would very much appreciate the opportunity to further discuss this case with the Examiner should, after reading this paper, the Examiner have thoughts as to what would put this application into a condition for allowance.

#### CONCLUSION

In view of the foregoing, it is submitted that this application is in a condition for allowance. Action to that end is hereby requested.

It is respectfully requested that, if necessary to effect a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response and shortages in other fees be charged, or any overpayment in fees be credited, to the Account of Barnes & Thornburg, Deposit Account No. 10-0435 with reference to file 265280-68002.

Respectfully submitted,  
BARNES & THORNBURG LLP



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